

Name: _____

Per: _____

Atomic Structure WS 6

1. Here are three isotopes of an element: ${}_6^{12}\text{C}$ ${}_6^{13}\text{C}$ ${}_6^{14}\text{C}$
- The element is: _____
 - The number 6 refers to the _____
 - The numbers 12, 13, and 14 refer to the _____
 - How many protons and neutrons are in the first isotope? $p^+ =$ _____ $n^0 =$ _____
 - How many protons and neutrons are in the second isotope? $p^+ =$ _____ $n^0 =$ _____
 - How many protons and neutrons are in the third isotope? $p^+ =$ _____ $n^0 =$ _____

2. Complete the following chart:

| Isotope Name | Atomic # | Atomic Mass | Protons | Neutrons | Electrons |
|---------------|----------|-------------|---------|----------|-----------|
| Uranium - 235 | | 235 | | | |
| Uranium - 238 | | 238 | | | |
| Boron - 10 | | 10 | | | |
| Boron - 11 | | 11 | | | |
| | | | 6 | 6 | |
| | | 14 | | | 6 |
| | | 15 | 7 | | |
| | 7 | | | 13 | |
| | 16 | 23 | | | |
| | | 25 | | | 16 |
| Sodium - | | 22 | | | |
| Sodium - | | 20 | | | |
| | | | 29 | 30 | |
| | | | | 32 | 29 |
| | | 110 | 47 | | |
| | | | | 62 | 47 |

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3. Naturally occurring europium (Eu) consists of two isotopes with masses of 151 and 153. If in a sample of 100 Europium atoms, Europium-151 has an abundance of 48 isotopes and Europium-153 has an abundance of 52. What is the atomic mass of europium?
4. If 100 samples of the element Strontium consists of four isotopes with masses of 84 (abundance = 1), 86 (abundance = 20), 87 (abundance = 14), and 88 (abundance = 65). Calculate the atomic mass of strontium.
5. Uranium has three common isotopes. If the abundance of U - 234 is 5, the abundance of U - 235 is 23, and the abundance of U -238 is 72, what is the average atomic mass of uranium?